

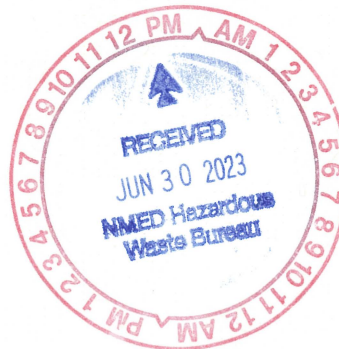


DEPARTMENT OF ENERGY
Environmental Management Los Alamos Field Office (EM-LA)
Los Alamos, New Mexico 87544

EMLA-23-BF259-2-1

June 30, 2023

Mr. Rick Shean
Designated Agency Manager
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6313



Subject: Monthly Notification of Groundwater Data Reviewed in June 2023

Dear Mr. Shean:

This letter is the written submission of the U.S. Department of Energy (DOE) Environmental Management Los Alamos Field Office (EM-LA) and Newport News Nuclear BWXT-Los Alamos, LLC (N3B) in accordance with Section XXVI.D of the 2016 Compliance Order on Consent modified February 2017 (Consent Order). Members of EM-LA and N3B met on June 15, 2023, to review groundwater data loaded or released in the Environmental Information Management System (EIMS) during the previous calendar month. The enclosed report was prepared by comparing the data against groundwater notification criteria as defined in Section IX of the Consent Order. These criteria consider New Mexico Water Quality Control Commission (NMWQCC) groundwater standards, U.S. Environmental Protection Agency (EPA) maximum contaminant levels (MCLs), New Mexico Environment Department (NMED) screening levels for tap water, EPA regional screening levels for tap water, and NMED-approved background values for hydrogeological zones as set forth in the "Groundwater Background Investigation Report, Revision 5." The EPA's tap water standard for carcinogenic risk values were adjusted to 1×10^{-5} , as specified in the Consent Order.

The enclosed report was prepared using the November 2022 EPA regional screening levels for tap water; the NMWQCC groundwater standards published December 21, 2018; and the June 2022 Table A-1 of "Risk Assessment Guidance for Site Investigations and Remediation" for NMED tap water screening levels.

1-Day Notification

One-day oral notification was not required during the calendar month, because no contaminants were detected in a well screen interval or spring at a concentration that exceeded either the NMWQCC groundwater standard or federal MCL, at locations where such contaminants have not previously been detected above the respective standards as defined in the Consent Order (based on samples collected since June 14, 2007).

15-Day Notification

The information required for constituents that meet the five reporting criteria requiring written notification within 15 days is provided in the enclosed report and tables.

If you have questions, please contact Amanda White at (505) 309-1366 (amanda.white@em-la.doe.gov) or Hai Shen at (505) 709-7600 (hai.shen@em.doe.gov).

Sincerely,



Digitally signed by
BRIAN HARCEK
Date: 2023.06.29
15:53:59 -06'00'

Arturo Q. Duran For
Compliance and Permitting Manager
U.S. Department of Energy
Environmental Management
Los Alamos Field Office

Enclosure(s):

1. Summary of Groundwater Data Reviewed in June 2023 that Meet Notification Requirements (EM2023-0467)

cc (letter with CD/DVD enclosure[s]):

Steven Lynne, Los Alamos County, Los Alamos, NM (2 copies)

cc (letter and enclosure[s] emailed):

Laurie King, EPA Region 6, Dallas, TX
Raymond Martinez, San Ildefonso Pueblo, NM
Dino Chavarria, Santa Clara Pueblo, NM
David Gomez, Los Alamos County, Los Alamos, NM
Steve Yanicak, NMED-DOE-OB
Justin Ball, NMED-GWQB
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SUMMARY OF GROUNDWATER DATA REVIEWED IN JUNE 2023 THAT MEET NOTIFICATION REQUIREMENTS

INTRODUCTION

This report provides information to the New Mexico Environment Department (NMED) concerning recent groundwater monitoring data obtained by Newport News Nuclear BWXT-Los Alamos, LLC (N3B) under the annual “Interim Facility-Wide Groundwater Monitoring Plan, Revision 1” (IFGMP) for the 2023 monitoring year (N3B 2022, 702346). The report contains results for contaminants and other chemical constituents that meet the five screening criteria described in Section XXVI.D of the 2016 Compliance Order on Consent, modified February 2017 (Consent Order). The report covers groundwater samples collected from wells or springs (listed in the accompanying tables) that provide surveillance of the hydrogeological zones at Los Alamos National Laboratory (LANL or the Laboratory), as indicated in the tables.

The report includes two tables. Table 1, NMED 5-23 Groundwater Report, presents categorical results since June 14, 2007, that meet the five reporting criteria as specified in the Consent Order. Table 2, NMED 5-23 Groundwater Report Addendum, presents results that exceed the 95th percentile of the results in the data set defined in the “Groundwater Background Investigation Report, Revision 5” (GBIR) (LANL 2016, 601920). Only the contaminants and other chemical constituents that lack a calculated groundwater background value (i.e., the frequency of detections was too low to calculate a background value at the 95% upper tolerance level) are listed in this table. Table 2 is a voluntary submission by N3B to NMED that identifies the potential risk resulting from contaminants and other chemical constituents that are without defined background values.

These tables include the following:

- comments on results that appear to be exceptional based on consideration of monitoring data acquired from previous analyses (using statistics described below);
- supplemental information summarizing monitoring results obtained from previous analyses; and
- sampling date, name of the well or spring, location of the well or spring, depth of the screened interval, groundwater zone sampled, analytical result, detection limit, values for regulatory standards or screening levels, and analytical and secondary validation qualifiers.

Additional information describing the locations and analytical data is included. All data have been through secondary validation.

This report was prepared by comparing the data against groundwater notification criteria as defined in Section IX of the Consent Order. These criteria consider New Mexico Water Quality Control Commission (NMWQCC) groundwater standards, U.S. Environmental Protection Agency (EPA) maximum contaminant levels (MCLs), NMED screening levels for tap water, EPA regional screening levels for tap water, and NMED-approved background values for hydrogeological zones as set forth in the GBIR. The EPA’s tap water standard carcinogenic risk values were adjusted to 1×10^{-5} , as specified in the Consent Order. This report was prepared using the November 2022 EPA regional screening levels for tap water; the NMWQCC groundwater standards published December 21, 2018; and the NMED tap water screening levels specified in the June 2022 Table A-1 of “Risk Assessment Guidance for Site Investigations and Remediation” (Risk Assessment Guidance) (NMED 2022, 702141, Table A-1).

Background values applied in Table 1 notification criterion C4 are the background values for hydrogeological zones as set forth in the GBIR.

Screening values applied in Table 2 criteria XC2scr and XC4scr are the 95th percentile of the data set used to establish background as defined in the GBIR.

DESCRIPTION OF TABLES

1-Day Notification Requirement

The CA value is used in the Criteria Code column of Table 1. The CA value indicates detection of a contaminant in a well screen interval or spring at a concentration that exceeds either the NMWQCC water quality standard or the EPA MCL, if that contaminant has not previously exceeded such a water quality standard at that location. N3B, under the U.S. Department of Energy Environmental Management Los Alamos Field Office, notifies NMED orally within 1 business day after review of such analytical data and also includes the data in the 15-day notification table.

15-Day Notification Requirement

Table 1 is divided into separate categories that correspond to the five screening criteria in Section XXVI.D of the Consent Order. In several cases, data met more than one of the notification criteria and, therefore, appear in the table multiple times.

The criterion (C) codes and their definitions are as follows:

- C1. Detection of a contaminant that is an organic compound in a spring or screened interval of a well if that contaminant has not previously been detected in the spring or screened interval
- C2. Detection of a contaminant that is a metal or other inorganic compound at a concentration above the background level in a spring or screened interval of a well if that contaminant has not previously exceeded the background level in the spring or screened interval
- C3. Detection of a contaminant in a spring or screened interval of a well at a concentration that (1) exceeds the lower of either one-half the NMWQCC water quality standard or one-half the federal MCL, or, if there is no such standard for the contaminant, (2) exceeds one-half the tap water screening levels in Table A-1 of NMED's Risk Assessment Guidance, or, if there is no NMED tap water screening level available for a contaminant, (3) exceeds one-half the EPA regional human health medium-specific screening level for tap water if that contaminant has not previously exceeded one-half such standard or screening level in the spring or screened interval
- C4. Detection of a contaminant that is a metal or other inorganic compound in a spring or screened interval of a well at a concentration that exceeds 2 times the background level for the third consecutive sampling of the spring or screened interval
- C5. Detection of a contaminant in a spring or screened interval of a well at a concentration that exceeds either one-half the NMWQCC water quality standard or one-half the federal MCL and which has increased for the third consecutive sampling of that spring or screened interval

Table 2 is divided into two categories that correspond to two screening criteria. They mirror C2 and C4 in Table 1, respectively.

The two criteria are as follows:

XC2scr Detection of a contaminant that is a metal or other inorganic compound at a concentration above the 95th percentile in a spring or screened interval of a well, if that contaminant has not previously exceeded the 95th percentile of the data set used to establish background in the spring or screened interval as defined in the GBIR

XC4scr Detection of a contaminant that is a metal or other inorganic compound in a spring or screened interval of a well at a concentration that, for the third consecutive sampling, exceeds 2 times the 95th percentile of the data set used to establish background as defined in the GBIR

Columns 2 through 8 in both tables provide summary statistics for metals or organic/inorganic compounds by field preparation code (e.g., filtered [F] aluminum) for samples collected since January 1, 2000, including the currently reported data. The statistics include the date of the first sampling event; the number of sampling events and samples analyzed; the number of detections; and the minimum, maximum, and median concentration for detections. This information indicates whether the new result is consistent with the range of earlier data.

The subsequent columns contain location and sampling information as follows:

Canyon—canyon where monitoring location is found

Zone—hydrogeological zone from which the groundwater sample was collected (e.g., alluvial spring)

Location—monitoring location name

Screen Depth—depth of top of well screen in feet (0 for springs, -1 if unknown)

Start Date—date the sample was collected

Fld QC Type Code—identifies regular samples (REG) or field duplicates (FD)

Fld Prep Code—identifies whether samples are filtered (F) or unfiltered (UF)

Lab Sample Type Code—indicates whether result is a primary sample (INIT) or reanalysis (RE)

Analytical Suite Code—analytical suite (such as volatile organic compounds) for analyzed compound

Analyte Description—name of analyte

Analyte—chemical symbol for analyte or CAS (Chemical Abstracts Service) number for organic compounds

Std Result—analytical result in standard measurement units

Result/Median—ratio of the Std Result to the median of all detections since 2000

LVL Type/Risk Code—type of regulatory standard, screening level, or background value (indicating groundwater zone) used for comparison

Screen Level—value of the LVL Type/Risk Code

Exceedance Ratio—ratio of Std Result to LVL Type/Risk Code. In earlier versions of this report, the ratio was divided by the basis for comparison in the criterion, but that is no longer the case. For example, for a criterion (such as C3) that compares the value with one-half the standard, a value equal to a standard previously had an exceedance ratio of 2. The current report shows this ratio as 1.

Std MDL—method detection limit in standard measurement units

Std UOM—standard units of measurement

Dilution Factor—amount by which the sample was diluted to measure the concentration

Lab Qualifier—analytical laboratory qualifier indicating analytical quality of the sample data

Validation Qualifier—the qualifier that indicates the effects of all processes associated with the sample (e.g., sample collection, additional quality control samples such as field duplicates) on the quality of the sample data

Validation Reason Code—an explanation of the reason for validation of the qualifiers

Analytical Method Code—analytical method number

Lab Code—analytical laboratory name

Comment—N3B comment regarding the analytical result

Acronyms and Abbreviations

The tables may include the following acronyms, abbreviations, and analytical laboratory codes and qualifiers:

CFA—Cape Fear Analytical, LLC

DOECAP—Department of Energy Consolidated Audit Program

DNX—hexahydro-1,3-dinitro-5-nitro-1,3,5-triazine

EPA MCL—U.S. Environmental Protection Agency maximum contaminant level

F—filtered

FD—field duplicate

GELC—GEL Laboratories, LLC, Division of the GEL Group, Charleston, SC

GENINORG—General inorganic

HEXP—high explosive

HMX—octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine

HRGC/HRMS—high-resolution gas chromatography/high-resolution mass spectrometry

ICP-AES—inductively coupled plasma atomic emission spectroscopy

ICP-MS—inductively coupled plasma mass spectrometry

IFGMP—Interim Facility-Wide Groundwater Monitoring Plan

INIT—primary sample

LANL Int BG LV—Los Alamos National Laboratory intermediate background level

LANL Reg BG LV—Los Alamos National Laboratory regional background level

LCMS/MS—liquid chromatography mass spectrometry/mass spectrometry

LCS—laboratory control sample

MDL—method detection limit

MNX—hexahydro-1-nitroso-3,5-dinitro-1,3,5-triazine

MS—matrix spike

MSD—matrix spike duplicate

n/a—not applicable

NM GW STD—New Mexico Water Quality Control Commission groundwater standard

NMED A1 TAP SCRNLVL—New Mexico Environment Department Table A-1 screening level for tap water

NTU—nephelometric turbidity unit

PETN—pentaerythritol tetranitrate

PFAS—per- and polyfluoroalkyl substances

PQL—practical quantitation limit

RDX—Royal Demolition Explosive (hexahydro-1,3,5-trinitro-1,3,5-triazine)

RE—reanalysis

REG—regular sample

RL—reporting limit

RPD—relative percent difference

SIM—selected ion monitoring

SVOC—semivolatile organic compound

SwRI—Southwest Research Institute

RI—reissue

TDS—total dissolved solids

TNX—2,4,6-trinitroxylylene

UAL—upper acceptance limit

UF—unfiltered

UOM—unit of measurement

VOC—volatile organic compound

Analytical Laboratory Codes and Qualifiers

I6b (validation reason code)—The associated MS percent recovery is greater than the upper acceptance limit (UAL).

J (lab qualifier)—The associated numerical value is an estimated quantity.

J (validation qualifier)—The analyte is classified as detected but the reported concentration value is expected to be more uncertain than usual.

J+ (validation qualifier)—The analyte is classified as detected but the reported concentration value is expected to be more uncertain than usual with a potential positive bias.

J_LAB (validation reason code)—The analytical laboratory qualified the detected result as estimated (J) because the result was less than the practical quantitation limit (PQL) but greater than the MDL.

NQ (validation qualifier)—No validation qualifier flag is associated with this result, and the analyte is classified as detected.

NQ (validation reason code)—The analytical laboratory did not qualify the analyte as not detected and/or with any other standard qualifier. The analyte is detected in the sample.

REFERENCES

The following reference list includes documents cited in this report. Parenthetical information following each reference provides the author(s), publication date, and ERID, ESHID, or EMID. ERIDs were assigned by the Laboratory's Associate Directorate for Environmental Management (IDs through 599999); ESHIDs were assigned by the Laboratory's Associate Directorate for Environment, Safety, and Health (IDs 600000 through 699999); and EMIDs are assigned by N3B (IDs 700000 and above).

LANL (Los Alamos National Laboratory), October 27, 2016. "Groundwater Background Investigation Report, Revision 5," Los Alamos National Laboratory document LA-UR-16-27907, Los Alamos, New Mexico. (LANL 2016, 601920)

N3B (Newport News Nuclear BWXT-Los Alamos, LLC), September 2022. "Interim Facility-Wide Groundwater Monitoring Plan for the 2023 Monitoring Year, October 2022–September 2023, Revision 1," Newport News Nuclear BWXT-Los Alamos, LLC, document EM2022-0656, Los Alamos, New Mexico. (N3B 2022, 702346)

NMED (New Mexico Environment Department), June 2022. "Risk Assessment Guidance for Site Investigations and Remediation, Volume 1, Soil Screening Guidance for Human Health Risk Assessments," Hazardous Waste Bureau and Ground Water Quality Bureau, Santa Fe, New Mexico. (NMED 2022, 702141)

Table 1: NMED 5-23 Groundwater Report

Criteria Code	Visits	Samples	First Event	Min Detect	Max Detect	Median Detect	Num Detect	Canyon	Zone	Location	Screen Depth (ft)	Start Date	Fid QC Type Code	Fid Prep Code	Lab Sample Type Code	Analy Suite Code	Analyte Desc	Analyte	Std Result	Result/Median	LVL Type/Risk Code	Screen Level	Exceedance Ratio	Std MDL	Std UOM	Dilution Factor	Lab Qualifier	Validation Qualifier	Validation Reason Code	Analy Meth Code	Lab Code	Comment
C2	4	5	01/30/2022	0.228	0.494	0.318	5	Sandia Canyon	Regional Top	R-71 S1 ^{a,b}	1285.0	04/14/2023	REG	F	INIT	Geninorg	Fluoride	F(-1)	0.494	1.6	LANL Reg BG LVL	0.377	1.3	0.0330	mg/L	1.00	NQ	NQ	EPA:300.0	GELC		
C2	4	5	01/23/2022	15.8	17.8	15.9	5	Sandia Canyon	Regional Deep	R-71 S2 ^c	1349.7	04/17/2023	REG	F	INIT	Metals	Calcium	Ca	17.8	1.1	LANL Reg BG LVL	17.03	1	0.05	mg/L	1.00	NQ	NQ	SW-846:6010D	GELC		
C4	106	128	05/17/2005	2.27	9.25	5.605	128	Sandia Canyon	Regional Top	R-11	855.0	04/14/2023	REG	F	INIT	Geninorg	Nitrate-Nitrite as Nitrogen	NO3+NO2-N	6.75	1.2	LANL Reg BG LVL	0.769	8.8	0.850	mg/L	50.0	NQ	NQ	EPA:353.2	GELC		
C4	106	128	05/17/2005	5.95	20.2	9.74	128	Sandia Canyon	Regional Top	R-11	855.0	04/14/2023	REG	F	INIT	Geninorg	Sulfate	SO4(-2)	10.5	1.1	LANL Reg BG LVL	4.59	2.3	0.133	mg/L	1.00	NQ	NQ	EPA:300.0	GELC		
C4	68	83	02/24/2000	1.35	3.31	2.12	83	Mortandad Canyon	Regional Top	R-15	958.6	05/01/2023	REG	F	INIT	Geninorg	Nitrate-Nitrite as Nitrogen	NO3+NO2-N	2.18	1	LANL Reg BG LVL	0.769	2.8	0.0850	mg/L	5.00	NQ	NQ	EPA:353.2	GELC		
C4	59	71	02/28/2007	5.34	12.8	8.86	69	Mortandad Canyon	Regional Top	R-15	958.6	05/01/2023	REG	F	INIT	LCMS/MS	Perchlorate	ClO4	12.8	1.4	LANL Reg BG LVL	0.414	30.9	0.100	µg/L	2.00	NQ	NQ	SW-846:6850	GELC		
C4	94	110	08/30/2007	68	408	348	110	Sandia Canyon	Regional Deep	R-35a	1013.1	04/25/2023	REG	F	INIT	Metals	Barium	Ba	355	1	LANL Reg BG LVL	38.1	9.3	1.00	µg/L	1.00	NQ	NQ	SW-846:6010D	GELC		
C4	93	110	08/30/2007	5.97	7.31	6.58	110	Sandia Canyon	Regional Deep	R-35a	1013.1	04/25/2023	REG	F	INIT	Geninorg	Chloride	Cl(-1)	6.49	1	LANL Reg BG LVL	2.7	2.4	0.0670	mg/L	1.00	J+	I6b	EPA:300.0	GELC		
C4	94	110	08/30/2007	1.2	28.4	8.6	109	Sandia Canyon	Regional Deep	R-35a	1013.1	04/25/2023	REG	F	INIT	Metals	Nickel	Ni	6.97	0.8	LANL Reg BG LVL	2.9	2.4	0.600	µg/L	1.00	NQ	NQ	SW-846:6020B	GELC		
C4	57	66	11/05/2008	3.6	9.39	7.815	66	Sandia Canyon	Regional Top	R-43 S1	903.9	05/01/2023	REG	F	INIT	Geninorg	Chloride	Cl(-1)	6.75	0.9	LANL Reg BG LVL	2.7	2.5	0.0670	mg/L	1.00	NQ	NQ	EPA:300.0	GELC		
C4	57	71	11/05/2008	2.35	223	154	68	Sandia Canyon	Regional Top	R-43 S1	903.9	05/01/2023	REG	F	INIT	Metals	Chromium	Cr	175	1.1	LANL Reg BG LVL	7.48	23.4	3.00	µg/L	1.00	NQ	NQ	SW-846:6020B	GELC		
C4	57	65	11/05/2008	4.63	6.15	5.325	64	Sandia Canyon	Regional Top	R-43 S1	903.9	05/01/2023	REG	F	INIT	Geninorg	Nitrate-Nitrite as Nitrogen	NO3+NO2-N	5.00	0.9	LANL Reg BG LVL	0.769	6.5	0.0850	mg/L	5.00	NQ	NQ	EPA:353.2	GELC		
C4	57	66	11/05/2008	8.77	21	16.2	66	Sandia Canyon	Regional Top	R-43 S1	903.9	05/01/2023	REG	F	INIT	Geninorg	Sulfate	SO4(-2)	14.8	0.9	LANL Reg BG LVL	4.59	3.2	0.133	mg/L	1.00	NQ	NQ	EPA:300.0	GELC		
C4	56	62	11/10/2008	3.37	8.66	5.32	62	Sandia Canyon	Regional Deep	R-43 S2	969.1	05/01/2023	REG	F	INIT	Geninorg	Chloride	Cl(-1)	6.62	1.2	LANL Reg BG LVL	2.7	2.5	0.0670	mg/L	1.00	NQ	NQ	EPA:300.0	GELC		
C4	56	67	11/10/2008	1.8	49.1	14.1	57	Sandia Canyon	Regional Deep	R-43 S2	969.1	05/01/2023	REG	F	INIT	Metals	Chromium	Cr	32.5	2.3	LANL Reg BG LVL	7.48	4.3	3.00	µg/L	1.00	NQ	NQ	SW-846:6020B	GELC		
C4	56	61	11/10/2008	0.389	5.4	3.48	61	Sandia Canyon	Regional Deep	R-43 S2	969.1	05/01/2023	REG	F	INIT	Geninorg	Nitrate-Nitrite as Nitrogen	NO3+NO2-N	4.04	1.2	LANL Reg BG LVL	0.769	5.3	0.0850	mg/L	5.00	NQ	NQ	EPA:353.2	GELC		
C4	56	62	11/10/2008	3.96	11.5	8.25	62	Sandia Canyon	Regional Deep	R-43 S2	969.1	05/01/2023	REG	F	INIT	Geninorg	Sulfate	SO4(-2)	9.76	1.2	LANL Reg BG LVL	4.59	2.1	0.133	mg/L	1.00	NQ	NQ	EPA:300.0	GELC		
C4	91	96	02/17/2009	1.99	21.6	14.4	96	Mortandad Canyon	Regional Top	R-44 S1	895.0	04/11/2023	REG	F	INIT	Geninorg	Chloride	Cl(-1)	20.2	1.4	LANL Reg BG LVL	2.7	7.5	0.335	mg/L	5.00	NQ	NQ	EPA:300.0	GELC		
C4	91	96	02/17/2009	0.536	109	32.5	69	Mortandad Canyon	Regional Top	R-44 S1	895.0	04/11/2023	REG	F	INIT	Metals	Nickel	Ni	21.8	0.7	LANL Reg BG LVL	2.9	7.5	0.600	µg/L	1.00	NQ	NQ	SW-846:6020B	GELC		
C4	91	96	02/17/2009	0.123	3.86	2.23	95	Mortandad Canyon	Regional Top	R-44 S1	895.0	04/11/2023	REG	F	INIT	Geninorg	Nitrate-Nitrite as Nitrogen	NO3+NO2-N	2.67	1.2	LANL Reg BG LVL	0.769	3.5	0.170	mg/L	10.0	NQ	NQ	EPA:353.2	GELC		
C4	91	96	02/17/2009	2.76	21.4	14.1	96	Mortandad Canyon	Regional Top	R-44 S1	895.0	04/11/2023	REG	F	INIT	Geninorg	Sulfate	SO4(-2)	18.9	1.3	LANL Reg BG LVL	4.59	4.1	0.665	mg/L	5.00	NQ	NQ	EPA:300.0	GELC		
C4	94	101	02/28/2009	3	21.5	5.85	101	Mortandad Canyon	Regional Top	R-45 S1	880.0	04/12/2023	REG	F	INIT	Geninorg	Chloride	Cl(-1)	20.4	3.5	LANL Reg BG LVL	2.7	7.6	0.335	mg/L	5.00	NQ	NQ	EPA:300.0	GELC		
C4	94	101	02/28/2009	0.535	13.8	1.45	86	Mortandad Canyon	Regional Top	R-45 S1	880.0	04/12/2023	REG	F	INIT	Metals	Nickel	Ni	7.53	5.2	LANL Reg BG LVL	2.9	2.6	0.600	µg/L	1.00	NQ	NQ	SW-846:6020B	GELC		
C4	94	101	02/28/2009	0.256	4.1	2.87	101	Mortandad Canyon	Regional Top	R-45 S1	880.0	04/12/2023	REG	F	INIT	Geninorg	Nitrate-Nitrite as Nitrogen	NO3+NO2-N	2.92	1	LANL Reg BG LVL	0.769	3.8	0.170	mg/L	10.0	NQ	NQ	EPA:353.2	GELC		
C4	94	101	02/28/2009	4.1	21.4	8.86	101	Mortandad Canyon	Regional Top	R-45 S1	880.0	04/12/2023	REG	F	INIT	Geninorg	Sulfate	SO4(-2)	19.5	2.2	LANL Reg BG LVL	4.59	4.2	0.665	mg/L	5.00	NQ	NQ	EPA:300.0	GELC		
C4	93	101	03/05/2009	2.74	8.15	5.08	101	Mortandad Canyon	Regional Deep	R-45 S2	974.9	04/12/2023	REG	F	INIT	Geninorg	Chloride	Cl(-1)	5.70	1.1	LANL Reg BG LVL	2.7	2.1	0.0670	mg/L	1.00	NQ	NQ	EPA:300.0	GELC		
C4	93	106	03/05/2009	6.1	69.1	32.2	105	Mortandad Canyon	Regional Deep	R-45 S2	974.9	04/12/2023	REG	F	INIT	Metals	Chromium	Cr	41.7	1.3	LANL Reg BG LVL	7.48	5.6	3.00	µg/L	1.00	NQ	NQ	SW-846:6020B	GELC		
C4	95	104	03/06/2010	4.68	22.4	15.2	104	Mortandad Canyon	Regional Top	R-50 S1	1077.0	04/10/2023	REG	F	INIT	Geninorg	Chloride	Cl(-1)	20.9	1.4	LANL Reg BG LVL	2.7	7.7	0.335	mg/L	5.00	NQ	NQ	EPA:300.0	GELC		
C4	96	105	03/06/2010	1.51	25.6	6.66	105	Mortandad Canyon	Regional Top	R-50 S1	1077.0	04/10/2023	REG	F	INIT	Metals	Nickel	Ni	11.9	1.8	LANL Reg BG LVL	2.9	4.1	0.600	µg/L	1.00	NQ	NQ	SW-846:6020B	GELC		

Table 1: NMED 5-23 Groundwater Report

Criteria Code	Visits	Samples	First Event	Min Detect	Max Detect	Median Detect	Num Detect	Canyon	Zone	Location	Screen Depth (ft)	Start Date	Fid QC Type Code	Fid Prep Code	Lab Sample Type Code	Analy Suite Code	Analyte Desc	Analyte	Std Result	Result/Median	LVL Type/Risk Code	Screen Level	Exceedance Ratio	Std MDL	Std UOM	Dilution Factor	Lab Qualifier	Validation Qualifier	Validation Reason Code	Analy Meth Code	Lab Code	Comment
C4	96	106	03/06/2010	0.398	3.21	2.315	106	Mortandad Canyon	Regional Top	R-50 S1	1077.0	04/10/2023	REG	F	INIT	Geninorg	Nitrate-Nitrite as Nitrogen	NO3+NO2-N	2.96	1.3	LANL Reg BG LVL	0.769	3.8	0.170	mg/L	10.0		NQ	NQ	EPA:353.2	GELC	
C4	95	104	03/06/2010	7.22	21.5	17.25	104	Mortandad Canyon	Regional Top	R-50 S1	1077.0	04/10/2023	REG	F	INIT	Geninorg	Sulfate	SO4(-2)	19.8	1.1	LANL Reg BG LVL	4.59	4.3	0.665	mg/L	5.00		NQ	NQ	EPA:300.0	GELC	
C4	80	91	05/20/2011	2.03	54.5	28.65	90	Mortandad Canyon	Regional Top	R-61 S1	1125.0	04/10/2023	REG	F	INIT	Metals	Chromium	Cr	54.5	1.9	LANL Reg BG LVL	7.48	7.3	3.00	µg/L	1.00		NQ	NQ	SW-846:6020B	GELC	
C4	80	91	05/20/2011	0.427	3.3	2.33	91	Mortandad Canyon	Regional Top	R-61 S1	1125.0	04/10/2023	REG	F	INIT	Geninorg	Nitrate-Nitrite as Nitrogen	NO3+NO2-N	2.32	1	LANL Reg BG LVL	0.769	3	0.170	mg/L	10.0		NQ	NQ	EPA:353.2	GELC	
C4	79	90	05/20/2011	2.96	17	12.1	90	Mortandad Canyon	Regional Top	R-61 S1	1125.0	04/10/2023	REG	F	INIT	LCMS/MS	Perchlorate	ClO4	12.2	1	LANL Reg BG LVL	0.414	29.5	0.500	µg/L	10.0		NQ	NQ	SW-846:6850	GELC	
C4	33	36	08/04/2020	1.99	2.92	2.435	36	Mortandad Canyon	Regional Top	R-70 S1	963.0	04/11/2023	REG	F	INIT	Geninorg	Nitrate-Nitrite as Nitrogen	NO3+NO2-N	1.99	0.8	LANL Reg BG LVL	0.769	2.6	0.0850	mg/L	5.00		NQ	NQ	EPA:353.2	GELC	
C4	32	34	08/04/2020	10.7	19.3	14.6	34	Mortandad Canyon	Regional Deep	R-70 S2	1048.0	04/11/2023	REG	F	INIT	Geninorg	Chloride	Cl(-1)	11.3	0.8	LANL Reg BG LVL	2.7	4.2	0.134	mg/L	2.00		NQ	NQ	EPA:300.0	GELC	
C4	32	34	08/04/2020	131	272	185.5	34	Mortandad Canyon	Regional Deep	R-70 S2	1048.0	04/11/2023	REG	F	INIT	Metals	Chromium	Cr	136	0.7	LANL Reg BG LVL	7.48	18.2	3.00	µg/L	1.00		NQ	NQ	SW-846:6020B	GELC	
C4	32	34	08/04/2020	2.59	4.06	3.455	34	Mortandad Canyon	Regional Deep	R-70 S2	1048.0	04/11/2023	REG	F	INIT	Geninorg	Nitrate-Nitrite as Nitrogen	NO3+NO2-N	2.61	0.8	LANL Reg BG LVL	0.769	3.4	0.0850	mg/L	5.00		NQ	NQ	EPA:353.2	GELC	
C4	32	34	08/04/2020	17.5	32.6	23.15	34	Mortandad Canyon	Regional Deep	R-70 S2	1048.0	04/11/2023	REG	F	INIT	Geninorg	Sulfate	SO4(-2)	17.5	0.8	LANL Reg BG LVL	4.59	3.8	0.133	mg/L	1.00		NQ	NQ	EPA:300.0	GELC	
C4	3	4	01/30/2022	5.24	5.54	5.48	4	Sandia Canyon	Regional Top	R-71 S1	1285.0	04/14/2023	REG	F	INIT	Geninorg	Nitrate-Nitrite as Nitrogen	NO3+NO2-N	5.24	1	LANL Reg BG LVL	0.769	6.8	0.170	mg/L	10.0		NQ	NQ	EPA:353.2	GELC	
C4	4	5	01/30/2022	7.88	11	9.77	5	Sandia Canyon	Regional Top	R-71 S1	1285.0	04/14/2023	REG	F	INIT	Geninorg	Sulfate	SO4(-2)	10.4	1.1	LANL Reg BG LVL	4.59	2.3	0.133	mg/L	1.00		NQ	NQ	EPA:300.0	GELC	
C4	4	5	01/23/2022	3.87	4.75	4.51	5	Sandia Canyon	Regional Deep	R-71 S2	1349.7	04/17/2023	REG	F	INIT	Geninorg	Nitrate-Nitrite as Nitrogen	NO3+NO2-N	4.51	1	LANL Reg BG LVL	0.769	5.9	0.170	mg/L	10.0		NQ	NQ	EPA:353.2	GELC	

^a Data pertaining to a well drilled at a target angle from the vertical. Depth value represents linear feet along (down) the borehole.

^b S1 = Screen 1.

^c S2 = Screen 2.

Table 2: NMED 5-23 Groundwater Report Addendum

Criteria Code	Visits	Samples	First Event	Min Detect	Max Detect	Median Detect	Num Detect	Canyon	Zone	Location	Screen Depth (ft)	Start Date	Fid QC Type Code	Fid Prep Code	Lab Sample Type Code	Analytical Suite Code	Analyte Description	Analyte	Std Result	Result/Median	LVL Type/Risk Code	Screen Level	Exceedance Ratio	Std MDL	Std UOM	Dilution Factor	Lab Qualifier	Validation Qualifier	Validation Reason Code	Analytical Method Code	Lab Code	Comment
XC2scr	6	7	12/20/2021	0.0261	1.02	0.03785	4	Sandia Canyon	Regional Deep	R-72 S2 ^a	1290	04/13/2023	REG	F	INIT	Geninorg	Ammonia as Nitrogen	NH3-N	1.02	26.9	Reg-Scr_95	0.1	10.2	0.0170	mg/L	1.00		J+	I6b	EPA:350.1	GELC	
XC4scr	68	84	2/24/2000	2.6	18.2	11.6	81	Mortandad Canyon	Regional Top	R-15	958.6	05/01/2023	REG	F	INIT	Metals	Chromium	Cr	17.4	1.5	Reg-Scr_95	6.6	2.6	3.00	µg/L	1.00		NQ	NQ	SW-846:6020B	GELC	
XC4scr	94	110	08/30/2007	20.6	54.5	40.4	104	Sandia Canyon	Regional Deep	R-35a	1013.1	04/25/2023	REG	F	INIT	Metals	Boron	B	45.6	1.1	Reg-Scr_95	18.7	2.4	15.0	µg/L	1.00	J	J	J_LAB	SW-846:6010D	GELC	
XC4scr	94	110	08/30/2007	137	199	169	110	Sandia Canyon	Regional Deep	R-35a	1013.1	04/25/2023	REG	F	INIT	Metals	Strontium	Sr	177	1	Reg-Scr_95	74.4	2.4	1.00	µg/L	1.00		NQ	NQ	SW-846:6010D	GELC	
XC4scr	91	96	02/17/2009	0.0757	0.181	0.146	51	Mortandad Canyon	Regional Top	R-44 S1 ^b	895.0	04/11/2023	REG	F	INIT	Geninorg	Bromide	Br(-1)	0.172	1.2	Reg-Scr_95	0.067	2.6	0.0670	mg/L	1.00	J	J	J_LAB	EPA:300.0	GELC	
XC4scr	94	101	02/28/2009	0.0667	0.637	0.1265	60	Mortandad Canyon	Regional Top	R-45 S1	880.0	04/12/2023	REG	F	INIT	Geninorg	Bromide	Br(-1)	0.146	1.2	Reg-Scr_95	0.067	2.2	0.0670	mg/L	1.00	J	J	J_LAB	EPA:300.0	GELC	
XC4scr	95	104	03/06/2010	0.0691	0.545	0.1345	82	Mortandad Canyon	Regional Top	R-50 S1	1077.0	04/10/2023	REG	F	INIT	Geninorg	Bromide	Br(-1)	0.155	1.2	Reg-Scr_95	0.067	2.3	0.0670	mg/L	1.00	J	J	J_LAB	EPA:300.0	GELC	

^a S2 = Screen 2.

^b S1 = Screen 1.

